EPA
New England

"Effective oil analysis is the best method for accurately determining maximum oil service life. When the correct test is performed ... oil analysis will suggest the optimum length of service for (an) oil change."
The Maintenance Council; RP334 (T)

"Oil analysis has helped our entire maintenance program. We have saved a lot of time and money through 'OA,' and it has given us information on the internal conditions of our equipment."
Chuck Rippa
Maintenance Foreman
Highway Department
Sterling, Mass.

Save Time & $$$$ Optimize Oil Drain Intervals

Interested in saving time, saving money and reducing your liability at the same time? Then read on!

Most any engine can easily run over 200,000 miles before needing major repair — if the oil quality is maintained. Many facilities routinely change engine oils at a set mileage, hour of use or time period, such as 3,000 miles, 100 hours or three months. But changing oil this frequently may not get the most life out of the oil. Oil does not wear out or break down. It only gets dirty. The only way to know if the oil quality is still good is to analyze the oil.

Oil analysis helps to prevent unnecessary oil changes by providing information on the oil's actual condition, not its use. Many municipal and commercial fleets around New England have benefited from switching to oil analysis as the method of determining oil change intervals. In most cases, facilities that use oil analysis find they can extend the drain interval at least twice as long. Some facilities have extended the drain period as much as ten times as the time/mileage method they used to use by adding advanced filters along with oil analysis (see fact sheet on advanced filtration).

What is Oil Analysis?

Oil analysis is a tool for testing the condition of oil and detects engine problems. Through a series of tests, oil analysis reveals the lubricant condition, contamination level, and wear rates of engine components. The analysis usually includes tests for water, fuel, viscosity, detergents, base or acid level, and anti-wear additives. Test results may indicate changing the oil early, or if no problems, extending the use of the oil. Early detection of problems, such as water, fuel or antifreeze in the oil, can alert you to costly problems before they become costly headaches.

Because labs analyze hundreds of oil samples per day, they are quick to spot urgent problems and will call the client immediately. Final reports are usually received within days and include statistics along with comments like "check for fuel leak", "inspect intake air filter", or "extend service by 50 hours. "

The Benefits of Oil Analysis

- **Save Time: Less unscheduled down time caused by oil related equipment failures.**
- **Save Time: Extended service intervals that preclude unecessary or premature changes in oils.**
- **Save Time and Money: Reduction in product inventory.**
- **Save Time and Money: Reduction in waste oil needing disposal.**

New England Environmental Assistance Team

Isn't Changing the Oil Frequently Safe for the Engine?

Somewhat. But just changing the oil frequently does not identify problems within the engine. By analyzing the oil quality you can detect internal problems. For instance, a small amount of antifreeze can cause real damage to an engine. Oil analysis would identify an antifreeze leak, as well as other problems.

If you took an oil sample at the usual oil change frequency, analyzed it, and the results showed the oil was good for another 2,000 miles or 100 hours, you have saved the labor, down-time of the vehicle, time and cost of purchasing new oil, disposal of the waste oil, and the liability with storing and handling both the new and waste oil.

Oil analysis has been around for a long time. It is a scientific way to make sure your engine oil is performing as expected and should be considered essential to any preventative maintenance program.

Any size community can benefit from oil analysis. If you are interested in more information on oil analysis contact Jack Healey, EPA, at 617/918-1844, or email healey.jack@epamail.epa.gov.

In the late 1940's, several railroads began analyzing used oil to determine premature bearing failure in their diesel engines. This effort was so successful that the U.S. Defense Department applied these priciples to aircraft engines and stimulated instrumentation manufacturers to provide oil analysis equipment for their needs. Today, in addition to many individual laboratories, most large oil companies now offer an oil analysis service.

Tips

- **Consider oil analysis when bidding bulk oil.**
- **Determine who pays for oil analysis.**
- **Establish a maintenance program with good filtration, oil analysis, and proper disposal.**
- **If possible, use one oil that will service both your diesel and your gasoline equipment.**

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